

Database of Steel and Alloy (Marochnik)

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Characteristics for grade TS1 (Ц1).

Grade :	TS1 (Ц1)
Classification :	Primary zinc
Equivalent grades:	Is absent

Chemical composition in % for grade TS1 (Ц1)

Fe	Al	Cu	As	Pb	Zn	Sn	Cd	Impurity
max 0.01	max 0.005	max 0.002	max 0.0005	max 0.02	min 99.95	max 0.001	max 0.01	all 0.05

Mechanical properties under T=20°C for grade TS1 (Ц1)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Wire	Ø 0.3		100		15			
casted			120-140		0.3-0.5			
deformed			120-170		40-50			

Brinell hardness for TS1 (Ц1) , casted	HB 10 ⁻¹ = 30 - 40 MPa
Brinell hardness for TS1 (Ц1) , deformed	HB 10 ⁻¹ = 35 - 45 MPa

Technological properties of the material TS1 (Ц1) .

Forging temperature :	150 - 170 °C
Casting temperature :	430 - 450 °C
Linear shrinkage :	1.57 %

Physical properties for grade TS1 (Ц1)

T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	0.95			7180		
100		39.7				

Specification :
Mechanical properties :

σ_B	- Tensile strength , [MPa]
σ_T	- Yield stress , [MPa]
δ_5	- Specific elongation at fracture , [%]
ψ	- Reduction of area , [%]
KCU	- Impact strength , [kJ / m ²]
HB	- Brinell hardness , [MPa]

Physical properties :

T	- Test temperature , [Grade]
E	- Young modulus , [MPa]
α	- Coefficient of linear expansion (range 20° - T) , [1/Grade]
λ	- Thermal (heat) condition coefficient , [Watt/(m·Grade)]
ρ	- Density , [kg/m ³]
C	- Specific heat (range 20° - T) , [J/(kg·Grade)]
R	- Electrical resistance , [Ohm·m]

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 2500 steels and alloys (stainless steel, alloy steel, carbone steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).
Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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